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CLAIMS:

1. A pharmaceutical composition for vaccination, comprising:-

(i) a bacterial Cu,Zn-superoxide dismutase (Cu,Zn-SOD) of the dimeric type, or a fragment, variant or derivative of the Cu,Zn-SOD, wherein antibodies raised against said fragment, variant or derivative also bind intact full length Cu,Zn-SOD; or

(ii) a nucleic acid coding for the Cu,Zn-SOD fragment, variant or derivative; and

a pharmaceutically acceptable carrier.

2. A pharmaceutical composition according to Claim 1, wherein said composition provides protection against meningococcal infection.3. A pharmaceutical composition according to Claim 1 or 2, wherein said composition provides protective immunity to *Actinobacillus pleuropneumoniae* infection.4. A pharmaceutical composition according to Claims 1 or 2, wherein said composition provides protective immunity to infection from a gram negative bacterial species selected from the group consisting of *Pasteurellaceae*; *Neisseria*; *Haemophilus*; *Salmonella*; and *Escherichia*.5. A pharmaceutical composition according to any previous claim, wherein the Cu,Zn-SOD is obtainable from a recombinant gene cloned from bacteria.

6. A vaccine comprising (i) a bacterial Cu,Zn-superoxide dismutase (Cu,Zn-SOD) of the dimeric type, or a fragment, variant or derivative of the Cu,Zn-SOD, wherein antibodies raised against said fragment, variant or derivative

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also bind intact full length Cu,Zn-SOD; or (ii) a nucleic acid coding for the bacterial Cu,Zn-SOD fragment, variant or derivative.

7. A vaccine according to Claim 6, wherein the Cu,Zn-SOD is obtainable from a recombinant gene cloned from bacteria.
8. A vaccine according to Claims 6 or 7, wherein said vaccine provides protection against meningococcal infection.
9. A method of preparing a pharmaceutical composition comprising:-
 - 1) isolating a gene for a bacterial Cu,Zn-SOD of the dimeric type or a fragment, variant or derivative of the Cu,Zn-SOD, wherein antibodies raised against said fragment, variant or derivative also bind the full length intact Cu,Zn-SOD; and
 - 2) (a) synthesising the Cu,Zn-SOD fragment, variant or derivative from the gene; and combining said Cu,Zn-SOD, fragment, variant or derivative, with a pharmaceutically acceptable carrier, or
(b) combining said gene with a pharmaceutically acceptable carrier.
10. A pharmaceutical preparation comprising an antibody to a bacterial Cu,Zn-SOD of the dimeric type, or a fragment, derivative or variant of the Cu,Zn-SOD, wherein antibodies raised against said fragment, derivative or variant also bind intact full length Cu,Zn-SOD; and a pharmaceutically acceptable carrier.
11. A pharmaceutical preparation according to Claim 10, wherein said antibody provides protective immunity to meningococcal disease.

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12. A pharmaceutical preparation according to Claim 10, wherein said composition provides protective immunity to *Actinobacillus pleuropneumoniae* infection.
13. A pharmaceutical preparation according to Claim 10 or 11, wherein said composition provides protective immunity to infection from a gram negative bacterial species selected from the group consisting of *Pasteurellaceae*; *Neisseria*; *Haemophilus*; *Salmonella*; and *Escherichia*.
14. A pharmaceutical preparation according to any of Claims 10 to 13, wherein said antibody displays bactericidal activity.
15. A multivalent vaccine comprising a plurality of Cu,Zn-SODs of the dimeric type, or fragments, derivatives or variants thereof, wherein antibodies raised against said fragments, derivatives or variants also bind intact full length Cu,Zn-SOD, and wherein said plurality of Cu,Zn-SODS are from the same or different species of Gram negative bacteria.
16. A multivalent vaccine comprising a bacterial Cu,Zn-SOD of the dimeric type, or fragments, derivatives or variants thereof, wherein antibodies raised against said fragments, derivatives or variants also bind intact full length Cu,Zn-SOD; and a second protein that is not a Cu,Zn-SOD.
17. A multivalent vaccine according to Claims 15 or 16, wherein said vaccine provides protective immunity to meningococcal disease.
18. Use of a bacterial Cu,Zn-superoxide dismutase of the dimeric type, or a fragment, derivative or variant of the Cu,Zn-SOD, wherein antibodies raised against said fragment, derivative or variant also bind intact full length Cu,Zn-SOD; in the manufacture of a medicament for treatment or prevention of bacterial infection.

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